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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/330,894	06/11/1999	ISAO ICHIMURA	SONY-P9651	9978
22850	7590	04/07/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			CHU, KIM KWOK	
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ALEXANDRIA, VA 22314			PAPER NUMBER	

2633

DATE MAILED: 04/07/2004

25

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/330,894

Applicant(s)

ICHIMURA ET AL.

Examiner

Kim-Kwok CHU

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Reconsideration filed on 11/26/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-17,19-24 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-14 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,15-17,19-24 and 26-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**Response to Remarks**

1. Applicant's Request for Reconsideration (paper 23) filed on November 26, 2003 have been fully considered.

(a) Applicant requests that the Office Action (paper 22) mailed on October 21, 2003 be withdrawn because it is unsigned by a Primary Examiner. A new Office Action which corrects the error and clarifies the Examiner's argument is made.

2. Applicant's Remarks (paper 21) filed on August 6, 2003 have been fully considered but they are not persuasive.

(a) Applicant questions the prior art of Maeda's lens "moves in a periodic cycle of overall movement" (page 3 of the Remarks, line 5). In addition, Applicant states that Maeda's first lens moves in a simple linear movement from a first point to a second point (page 3 of the Remarks, lines 6 and 7). Accordingly, Maeda's lens group 36 and 37 move in a cyclic motion similar to Applicant's. For example, during a focusing operation, Maeda's lens 36 or 37 is driven according to the pit structure on the substrate. This feature is similar to Applicant's "the lens group is moved along the direction of the optical axis ..... synchronized with the appearance cycle of the pit portions" (page 23 of the specification, lines 14-18).

(b) Maeda's rotator 52 is adapted to rotate around the optical axis of the two group lens in a horizontal plane (Maeda's '834 patent, column 5, lines 45 and 46) so that the holder 62 (holding lens 37) moves upward/downward according to the pit structure of the recording medium. The upward/downward movement is a cyclic motion to adapt to the repetitive change of the pit pattern.

**Claim Rejections - 35 USC § 112**

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

*The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.*

4. Claims 1-3, 5-7, 15-17, 19-24 and 26-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

(a) in claim 1, last three lines, the amended feature "a cycle of the cyclic change in a distance between said first lens

and said second lens is longer than a cycle movement of said at least one of said first lens and said second lens" is new matter which is not supported by the originally filed specification;

(b) similarly, in claim 15, last two lines, the amended feature "a cycle of the cyclic movement of said secondary lens is longer than a cyclic of the cyclic movement of said primary lens" is new matter which is not supported by the originally filed specification; and

(c) in addition, in claim 22, last three lines, the amended feature "a cycle of the cyclic change in a distance between said first lens and said second lens is longer than a cycle movement of said at least one of said first lens and said second lens" is new matter which is not supported by the originally filed specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

*The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.*

6. Claims 1-3, 5-7, 15-17, 19-24 and 26-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) in claim 1, line 7, the feature "a moving means for cyclically moving ....." is unclear as to how the aberration compensation is cyclic; and

(b) similarly, in claims 15 and 22, lines 9 and 8 respectively, the terms "cyclically moving ....." is unclear as to how the aberration compensation is cyclic.

7. The claims not specifically mentioned above are indefinite based upon their dependence on a rejected claim.

**Claim Rejections - 35 USC § 102**

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --  
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by applicant for patent*

9. Claims 1 and 5 are rejected under 35 U.S.C. § 102(e) as being anticipated by Maeda et al. (U.S. Patent 6,005,834).

Maeda teaches an optical information recording/reproducing apparatus having as all of the elements and means as recited in claims 1 and 5. For example, Maeda teaches the following:

(a) as in claim 1, an optical pickup 23 for making a light beam emitted from a light source 31 incident on a recording medium 2 via a two-group objective lens 36, 37 so as to record or reproduce optical information on or from the recording medium (Fig. 2);

(b) as in claim 1, the two-group objective lens including a first lens 36 disposed in the vicinity of the recording medium 2 and a second lens 37 disposed at a position facing to the recording medium 2 (Fig. 3);

(c) as in claim 1, a moving means 58 and 38 for cyclically moving at least one of the first lens and the second lens

constituting part of the optical pickup in the direction of the optical axis (Fig. 3; column 5, lines 10-28);

(d) as in claim 1, a control means 26 for performing, upon focusing operation, the positional adjustment of the first lens and the second lens after start-up of focus control, on the basis of reproducing signals obtained from the recording medium at one or more points of the cyclic movement of the at least one of the first lens and the second lens by the moving means (Fig. 1; column 4, lines 15-19);

(e) as in claim 1, a cycle of the cyclic change in a distance between the first lens 36 and the second lens 37 is longer than a cycle of cyclic movement of at least one of the first lens 36 and the second lens 37 (Fig. 3; the vertical distance between lens 36 and 37 is  $d_1$ , a cyclic movement of lens 36 has a vertical distance  $d_2$ , the cyclic change in vertical distance between lens 36 and 37 is  $d_1 + d_2$  which is longer than the cyclic movement of the lens 36);

(f) as in claim 5, the control means 26 performs, upon focusing operation, the positional adjustment of the first lens and the second lens after start-up of focus control, on the basis of reproducing signals from the recording medium at both ends of the cyclic movement of the at least one of the first lens and the second lens by the moving means (Fig. 1; the positional



adjustment of lens based on reproducing signals such as tracking addresses is an inherent feature).

10. Claims 15 and 19 are rejected under 35 U.S.C. § 102(e) as being anticipated by Maeda et al. (U.S. Patent 6,005,834).

Maeda teaches an optical information recording/reproducing apparatus having as all of the elements and means as recited in claims 15 and 19. For example, Maeda teaches the following:

(a) as in claim 15, an optical information recording/reproducing apparatus including an optical pickup 23 for making a light beam emitted from a light source 31 incident on a recording medium 2 via a primary lens 36 disposed in the vicinity of the recording medium 2 and at least a secondary lens 37 so as to record or reproduce optical information on or from the recording medium 2 (Fig. 2);

(b) as in claim 15, a first drive means 58 for driving the primary lens 36 in the direction of the optical axis (Fig. 3; column 5, lines 10-28);

(c) as in claim 15, a second drive means 61 for driving the secondary lens in the direction of the optical axis (Fig. 3; column 5, lines 29-37);

(d) as in claim 15, a moving means 38 for cyclically moving at least one of the primary lens and the secondary lens

constituting part of the optical pickup in the direction of the optical axis (Fig. 3);

(e) as in claim 15, a control means 26 for performing, upon focusing operation, the positional adjustment of the primary lens and the secondary lens after start-up of focus control, on the basis of reproducing signals obtained from the recording medium at one or more points of the cyclic movement of the at least one of the primary lens and the secondary lens by the moving means (Fig. 1; the positional adjustment based on reproducing signals is an inherent feature because the reproduced signals provide servo and tracking information);

(f) as in claim 15, a cycle of the cyclic change in a distance between the first lens 36 and the second lens 37 is longer than a cycle of cyclic movement of at least one of the first lens 36 and the second lens 37 (Fig. 3; the vertical distance between lens 36 and 37 is  $d_1$ , a cyclic movement of lens 36 has a vertical distance  $d_2$ , the cyclic change in vertical distance between lens 36 and 37 is  $d_1 + d_2$  which is longer than the cyclic movement of the lens 36); and

(g) as in claim 19, the control means performs, upon focusing operation, the positional adjustment of the primary lens and the secondary lens after start-up of focus control, on the basis of reproducing signals from said recording medium at both ends of the cyclic movement of said at least one of the primary

lens and the secondary lens by said moving means (Fig. 1; the positional adjustment of lens based on reproducing signals such as tracking addresses is an inherent feature).

11. Claims 22 and 26 are rejected under 35 U.S.C. § 102(e) as being anticipated by Maeda et al. (U.S. Patent 6,005,834).

Maeda teaches a method of recording/reproducing information having all of the steps as recited in claims 22 and 26. For example, Maeda teaches the following:

(a) as in claim 22, using an optical pickup 23 for making a light beam emitted from a light source 31 incident on a recording medium 2 via a two-group objective lens 36 and 37 so as to record or reproduce optical information on or from the recording medium (Fig. 2);

(b) as in claim 22, the two-group objective lens including a first lens 36 disposed in the vicinity of the recording medium 2 and a second lens 37 disposed at a position facing to the recording medium 2 (Fig. 3);

(c) as in claim 22, cyclically moving at least one of the first lens 36 and the second lens 37 constituting part of the optical pickup in the direction of the optical axis (Fig. 3; column 5, lines 10-28);

(d) as in claim 22, the optical pickup 23 performs focusing operation, the positional adjustment of the first lens

and the second lens after start-up of focus control, on the basis of reproducing signals obtained from the recording medium at one or more points of the cyclic movement of the at least one of the first lens and the second lens (Fig. 1; the positional adjustment based on reproducing signals is an inherent feature because the reproduced signals provide servo and tracking information);

(e) as in claim 22, a cycle of the cyclic change in a distance between the first lens 36 and the second lens 37 is longer than a cycle of cyclic movement of at least one of the first lens 36 and the second lens 37 (Fig. 3; the vertical distance between lens 36 and 37 is  $d_1$ , a cyclic movement of lens 36 has a vertical distance  $d_2$ , the cyclic change in vertical distance between lens 36 and 37 is  $d_1 + d_2$  which is longer than the cyclic movement of the lens 36); and

(f) as in claim 26, performing, upon focusing operation, the positional adjustment of said first lens and said second lens after start-up of focus control, on the basis of reproducing signals from said recording medium at both ends of the cyclic movement of said at least one of said first lens and said second lens (Fig. 1; the positional adjustment of lens based on reproducing signals such as tracking addresses is an inherent feature).

**Claim Rejections - 35 USC § 103**

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

13. Claims 2, 3, 16, 17, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (U.S. Patent 6,005,834) in view of Funada (U.S. Patent 4,730,294).

Maeda teaches an optical information recording/reproducing apparatus very similar to that of the instant invention.

However, Maeda does not teach the following:

(a) as in claims 2, 16 and 23, the moving means is synchronized with an appearance cycle of pit signal portions which are previously, discretely formed on the recording medium; and

(b) as in claims 3, 17 and 24, the positional adjustment of the first lens and said second lens is based on an envelope component (DC offset) of a reproducing signal detected by said optical pickup.

Funada teaches the following:

(a) a optical pickup is synchronized with an appearance cycle of pit signal portions which are previously, discretely formed on the recording medium (column 1, lines 17-37); and

(b) the positional adjustment of the lens is based on an envelope component (DC offset) of a reproducing signal detected by the optical pickup (Fig. 1B and 2B; column 4, lines 4-10).

As in claims 2, 16 and 23, it is well known that pit signals such as pre-formatted pits are cyclic/periodically formed on an optical recording medium to synchronize/control an optical pickup's moving means. Hence, when there is a need for controlling an optical head such as Funada's and Maeda's, it would have been obvious to one of ordinary skill in the art at the time of invention to form pre-formatted pits similar to Funada's in Maeda's recording disk, because the cyclic/periodically formed pre-pits provide tracking addresses for controlling the pickup head's moving means.

In addition, as in claims 3, 17 and 24, since reproduced signals are in RF form and can not be used to drive any controlling means such as Maeda's driving motor, it is necessary to obtain DC (envelope component) components from the RF. For example, Funada uses an envelope component extracting/filtering means such as a rectifier 35 to extract/filter the pre-formatted pit signals to form DC offset signals. Hence, it would have been obvious to one of ordinary skill in the art at the time of

invention to filter out reproduced pre-formatted pit signals such as Funada's and Maeda's, because the filtered signal is a DC offset (envelope components) signal which can be used to drive a pickup's moving/positional means.

14. Claims 6, 7, 20, 21, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (U.S. Patent 6,005,834) in view Sugiyama et al. (U.S. Patent 4,352,981).

Maeda teaches an optical information recording/reproducing apparatus very similar to that of the instant invention.

However, Maeda does not teach the following:

(a) as in claims 6, 7, 20, 21, 27 and 28, an envelope component of a reproducing signal detected by the optical pickup, a signal component having passed through a low/high band filter is used for detection of a variation in amplitude accompanied by the adjustment of a distance between the first lens and the second lens.

Sugiyama teaches the following:

(a) an envelope component 7, 8 of a reproducing signal detected by the optical pickup so that a focusing and tracking error signal components are obtained by passing through a low/high band filter 20 (Figs. 9 and 10; column 7, lines 7-47).

Although Maeda does not disclose how to obtain servo signals

in order to activate his lens actuating means, for extracting envelope components such as focusing error and tracking error signals from Maeda's photodetector, it would have been obvious to one of ordinary skill in the art at the time of invention to use a low/high filter means such as Sugiyama's to filter out the envelope components of the reproduced signals, because the filter means uses a band filter as a high/low filtering means so that envelope components can be extracted in the form of varying amplitudes of the reproduced signals.



***Allowable Subject Matter***

15. Claims 8-14 are allowable over prior art.

16. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 8, the prior art of record fails to teach or fairly suggests an optical information recording/reproducing apparatus having an optical pickup for making a light beam emitted from a light source incident on a recording medium via a two-group objective lens so as to record or reproduce optical information on or from the recording medium; a third lens so as to record or reproduce optical information on or from the recording medium. Furthermore a first drive means for integrally driving the first lens and the second lens in the direction of the optical axis; a second drive means for driving the third lens in the direction of the optical axis.

17. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C.  
20231 Or faxed to:

(703) 872-9306 (for formal communications intended for  
entry. Or:

(703) 746-6909, (for informal or draft communications,  
please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park  
II, 2021 Crystal Drive, Arlington. VA., Sixth Floor  
(Receptionist).

Any inquiry of a general nature or relating to the status of  
this application should be directed to the Group receptionist  
whose telephone number is (703) 305-4700.

Any inquiry concerning this communication or earlier  
communications from the examiner should be directed to Kim CHU  
whose telephone number is (703) 305-3032 between 9:30 am to 6:00  
pm, Monday to Friday.

*KC 3/22/04*

Kim-Kwok CHU  
Examiner AU2653  
March 22, 2004

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